

WHAT IS CLAIMED IS:

1. An image processing apparatus comprising:

a halftone dot characteristic sampling section that samples a halftone dot characteristic indicative of a characteristic of a halftone dot based on image data;

a first counter that counts the number of halftone dot characteristics that exist in a first region including a target pixel from among halftone dot characteristics sampled by the halftone dot characteristic sampling section;

an edge pixel sampling section that samples a pixel belonging to an edge region based on image data;

a second counter that counts the number of edge pixels that exist in a second region including a target pixel from among edge pixels sampled by the edge pixel sampling section; and

a discriminator that discriminates whether or not the target pixel belongs to a character region in a halftone dot image based on the count result of the first counter and the count result of the second counter.

2. An image processing apparatus according to claim 1, wherein the edge pixel sampling section contains an edge detector that detects an edge quantity and, samples an internal edge pixel such that a positive edge detection quantity has been detected by the edge detector.

3. An image processing apparatus according to claim 1,

wherein the discriminator discriminates that a target pixel belongs to a character region in a halftone dot image in case that the count value of the first counter is smaller than a first threshold and the count value of the second counter is greater than a second threshold.

4. An image processing apparatus according to claim 1 further including a continuity detecting section that detects whether or not an edge has continuity, wherein the discriminator discriminates whether or not the target pixel belongs to a character region in a halftone dot image taking into consideration a detection result of the continuity detecting section.

5. An image processing apparatus according to claim 1 further including a correction unit that corrects image data based on a discrimination result of the discriminator.

6. An image processing apparatus according to claim 1, wherein the halftone dot characteristic sampling section contains a filter that detects isolate points as halftone dot characteristics.

7. An image processing apparatus according to claim 1, wherein the number of pixels in the first region is greater than the number of pixels in the second region.

8. An image processing apparatus comprising:

a first discrimination unit that discriminates whether or not each pixel of image data is a halftone dot characteristic indicative of a characteristic of a halftone dot image by using a first filter;

a second discrimination unit that discriminates whether or not each pixel of image data is a pixel that belongs to an edge region by using a second filter;

a first counter that counts the number of halftone dot characteristics that exist in a first pixel matrix consisting of a plurality of pixels containing a target pixel based on the discrimination result of the first discrimination unit;

a second counter that counts the number of edge pixels that exist in a second pixel matrix consisting of a plurality of pixels containing a target pixel based on the discrimination result of the second discrimination unit;

a discrimination unit that discriminates whether or not a target pixel belongs to a character region in a halftone dot image based on the count result of the first counter and the count result of the second counter; and

an image processing unit that processes image data based on the discrimination result of the discrimination unit.

9. An image processing apparatus according to claim 8, wherein the second discrimination unit contains a

discriminator that discriminates whether an edge region is an internal edge region or an external edge region, and pixels in an edge region the discriminator has discriminated an internal edge region is discriminated as edge pixels.

10. An image processing apparatus according to claim 8, wherein the discrimination unit discriminates that a target pixel belongs to a character region in a halftone dot image in case that a count value of the first counter is smaller than a first threshold and a count value of the second counter is greater than a second threshold.

11. An image processing apparatus according to claim 8 further including a continuity detecting section that detects whether or not an edge has continuity, wherein the discrimination unit discriminates whether or not the target pixel belongs to a character region in a halftone dot image taking into consideration a detection result of the continuity detecting section.

12. An image processing apparatus according to claim 8, wherein the first filter detects isolate points, and the first discrimination unit detects the isolation points as halftone dot characteristics.

13. An image processing apparatus according to claim 8, wherein the first pixel matrix is larger than the second

pixel matrix.

14. An image processing method comprising:

a step 1 of discriminating whether or not each pixel of image data is a halftone dot characteristic indicative of a characteristic of a halftone dot image and discriminating whether or not each pixel of image data is an edge pixel that belongs to an edge region;

a step 2 of counting the number of halftone dot characteristics that exist in a first pixel matrix consisting of a plurality of pixels including a target pixel based on the discrimination result in the step 1 and counting the number of edge pixels that exist in a second pixel matrix consisting of a plurality of pixels including the target pixel;

a step 3 of discriminating whether or not a target pixel belongs to a character region in a halftone dot image based on the number of halftone dot characteristics and the number of edge pixels counted in the step 2; and

a step 4 of processing image data based on the discrimination result in the step 3.